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Troutdale

Department of Health and Environmental Sciences

STATE OF MONTANA HELENA, MONTANA 59601

A. C. Knight, M.D., F.C.C.P.
Director

December 28, 1978

Madison County Health Department, Courthouse, Virginia City, MT 59755
 Madison City-County Planning Board, McAllister, MT 59740
 Montana State Library, Helena, MT 59601
 Environmental Quality Council, Helena, MT 59601
 Department of Community Affairs, Helena, MT 59601
 Department of Fish and Game, Helena, MT 59601
 Department of Highways, Helena, MT 59601
 Department of Natural Resources and Conservation, Helena, MT 59601
 Montana Bureau of Mines & Geology, c/o Montana Tech, W. Park St., Butte, MT 59701
 Fire Marshall Bureau, Department of Justice, Helena, MT 59601
 Soil Conservation Service, 511 Sanders, Helena, MT 59601
 Office of Interstate Landsales Registration, Attn: Carlton Goodwin, Title Bldg.,
 Room 324, 909 - 17th St., Denver, CO 80202
 Madison County Commissioners, Courthouse, Virginia City, MT 59755
 Madison County Sheriff, Courthouse, Virginia City, MT 59755
 Governor's Office, Helena, MT 59601
 Information Unit, Dept. of Health & Environmental Sciences, Helena, MT 59601
 Environmental Information Center, Box 12, Helena, MT 59601
 Ken Korte, Montana Historical Society, Helena, MT 59601
 Ben Johnson, Montana Properties, Box 607, Ennis, MT 59729
 Resources Engineers & Assoc., 2301 Colonial Drive, Helena, MT 59601
 Tom Warwick, Ennis Super of Schools, Ennis, MT 59729
 John Lantow, McAllister, MT 59740
 Dan Ledbetter, Ennis, MT 59729
 Dave Shank, McAllister, MT 59740
 Montana Power Company, 40 East Broadway, Butte, MT 59701

JAN 8 1979

MONTANA STATE LIBRARY
 930 E Lyndale Ave.
 Helena, Montana 59601

Re: Troutdale Subdivision
 Madison County

Ladies and Gentlemen:

The enclosed preliminary environmental review has been prepared for Troutdale Subdivision in Madison County and is submitted for your consideration. Questions and comments will be accepted until January 19, 1979. One extension of time not to exceed seven days will be granted upon request if there is sufficient reason for the request. All comments should be sent to the undersigned.

Sincerely,

Edward W. Casne, Chief
 Subdivision Bureau
 Environmental Sciences Division

EWC:APK:mh

Enclosures

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
Cogswell Building, Helena, Montana 59601
(406)449-3946

PRELIMINARY ENVIRONMENTAL REVIEW

Division/Bureau Environmental Sciences Division - Subdivision Bureau

Project or Application Troutdale Subdivision

Description of Project This is a proposed 115 lot, 250+ acre subdivision located seven miles north of Ennis located in the NW $\frac{1}{4}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$ and NE $\frac{1}{4}$ of Section 4, T5S, RLW, M.P.M. It would be developed in three phases. Phase I would consist of 32 lots on the north end of the property. The remaining lots would be subdivided in Phase II and Phase III. The subdivision is designed for single family residences to be served by individual water and sewer systems. Lot sizes range from 1 to 8 acres.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial & aquatic life and habitats			X			
2. Water quality, quantity and distribution			X			*
3. Geology & soil quality, stability and moisture			X			
4. Vegetation cover, quantity and quality			X			
5. Aesthetics		X				*
6. Air quality			X			
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air & energy			X			
9. Historical and archaeological sites				X		*



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POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores			X			
2. Cultural uniqueness and diversity			X			
3. Local and state tax base & tax revenue			X			
4. Agricultural or industrial production			X			*
5. Human health				X		
6. Quantity and distribution of community and personal income			X			
7. Access to and quality of recreational and wilderness activities				X		
8. Quantity and distribution of employment			X			
9. Distribution and density of population and housing		X				*
10. Demands for government services			X			*
11. Industrial & commercial activity			X			
12. Demands for energy			X			
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flows		X				*

Other groups or agencies contacted or which may have overlapping jurisdiction Madison County Planning Board

Individuals or groups contributing to this PER. Troutdale Environmental Impact

Assessment prepared by ECON, Inc., Resource Engineers & Assoc., Earth Science Services, Inc., Resource Engineers, Dept. of Fish and Game, Dept. of Highways. Recommendation concerning preparation of EIS

Recommend not to prepare EIS

PER Prepared by: Alfred P. Keppner

Date: 12/28/78

DHES/ESD-2

HISTORICAL AND ARCHAEOLOGICAL SITES - A ground reconnaissance of the subdivision site was conducted April 11, 1978 by consulting archaeologist Leslie B. Davis, Ph.D. No historic, paleontological, archaeological, cultural sites, structures or objects were discovered.

AESTHETICS - At full development 115 single family residences would be located on approximately 250 acres of land that is now agricultural. The protective covenants are designed to minimize this visual impact. Earth tone colors and natural exterior siding will be required on all structures. All utilities will be placed underground.

AGRICULTURAL OR INDUSTRIAL PRODUCTION - The majority of the property is agricultural land, alfalfa and wheat, with a narrow strip of native grass adjacent to a small stream that flows through the north half of the subdivision. If this proposed subdivision is developed, approximately 250 acres would be taken out of agricultural production.

TRANSPORTATION NETWORKS AND TRAFFIC FLOWS - Highway 287 which borders the proposed subdivision is classified as a principle arterial and carries 700 to 900 ADT in the vicinity of the proposed subdivision. The subdivision would generate about 920 trips per average day, if it was fully developed.

The sufficiency rating which concerns foundation, surface, drainage and safety is low for the section of U.S. 287 between Ennis and Norris where increased traffic would be greatest.

The capacity rating expresses the relationship between traffic volumes presently using a section of road and the ability of a section to accommodate such traffic. The capacity rating of the Ennis-Norris section of U.S. 287 is relatively high. The additional traffic generated by the proposed subdivision can be accommodated, but overall sufficiency ratings will drop. Safety ratings, which are low, will drop and there will be an increase in required maintenance. Probably the most noticable impact would result from traffic congestion at the approaches from the subdivision.

DEMANDS FOR GOVERNMENT SERVICES - Existing government services in the Ennis area are good, but facilities are limited. People questioned concerning available services state they can sustain a gradual growth, but any sudden, large growth will require immediate expansion. The gradual growth pattern is predicted for the subdivision.

DISTRIBUTION AND DENSITY OF POPULATION - At full development 115 single family residences would be located on approximately 250 acres of land that is now agricultural. The surrounding land is also agricultural therefore the density of population would be greatly increased.

WATER QUALITY, QUANTITY AND DISTRIBUTION - Twenty-one (21) groundwater monitoring holes were dug and checked for groundwater levels throughout late spring and summer 1978. Groundwater levels were below six (6) feet on all but seven (7) lots. Groundwater depths will be monitored in 1979 to determine if such practices as lining a drainage way would lower groundwater levels to acceptable limits.

A study on the effect the proposed subdivision would have on water quality was made by Resource Engineers and Associates of Helena. Their conclusion was that there would be minimal effect on water quality.

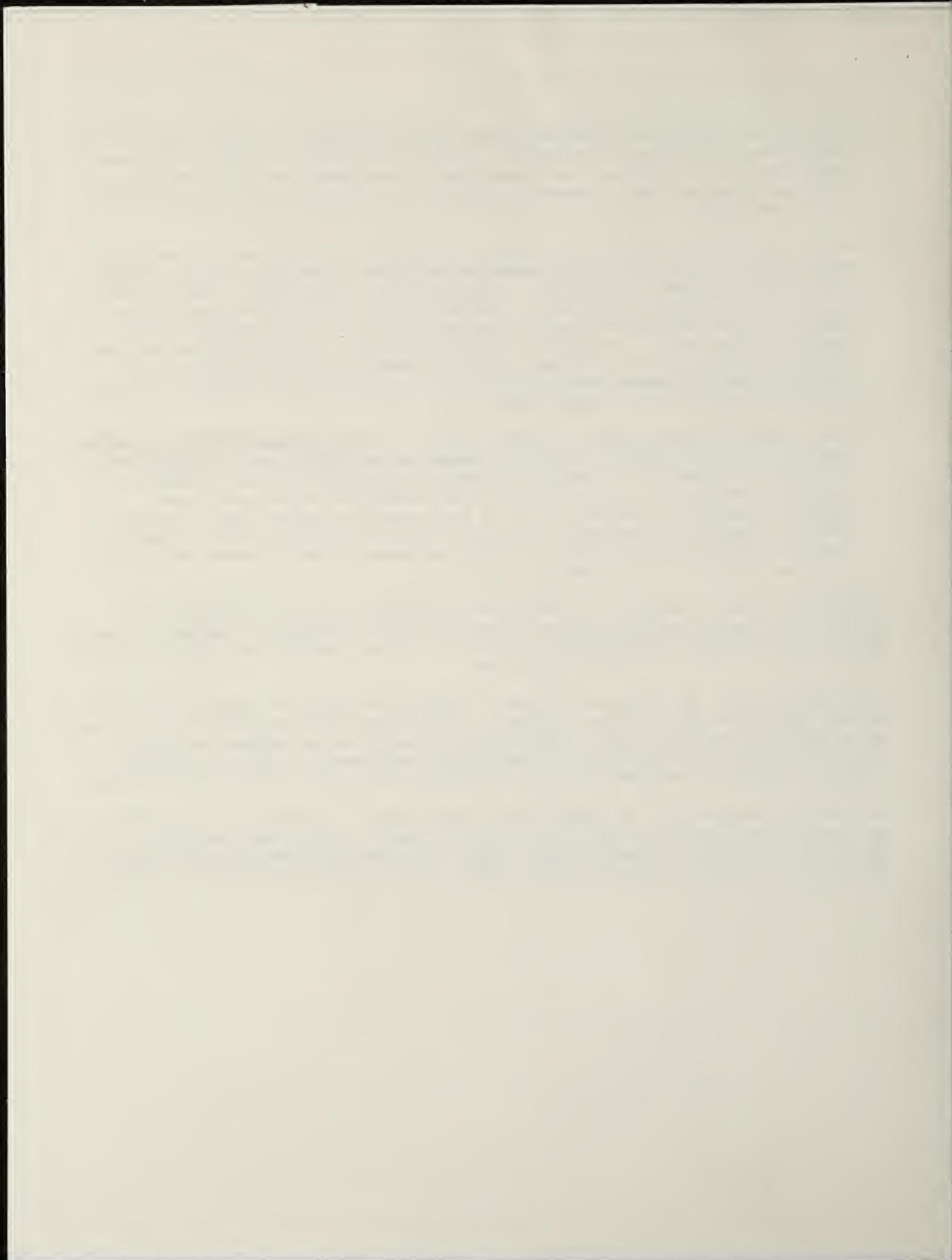
The Department of Health and Environmental Sciences retained Earth Science Services, Inc. to conduct a similar independent study. The conclusions of that study are as follows:

1. Although increasing the separation might reduce the amount of nitrate reaching the ground water, the amount of reduction, if any, is likely to be small. The known mechanisms for nitrogen loss and immobilization are associated with conditions near the ground surface. Increasing separation to reduce nitrates does not seem to be justified.
2. Since bacteria have been found to move as much as 13 feet downward through soils, some bacteria might reach the groundwater regardless of whether it is at a depth of 6 feet or 10 feet. I know of no instances where a scientific investigation has shown that bacteria move 100 feet in ground water in porous media, even in sand and gravel; and they do not seem to move more than a few feet below the water table in porous media. Consequently, water wells and surface water that are the required 100 feet from the nearest drainfield should be acceptably safe from contamination by disease-producing bacteria regardless of the separation between the ground surface and the water table.
3. Some viruses have been found to move as much as 20 feet downward through soils and some are also more mobile in the ground water system than bacteria. Consequently the hazards related to viruses may be somewhat greater than those related to bacteria. Nevertheless, the hazard to water wells and surface water seems minimal regardless of whether a 6 or 10 foot separation between ground surface and the water table is required; because I know of no instances where viruses have been shown to move 100 feet in the ground water system of porous media by a credible scientific investigation.

A cooperative water quality study between the Department of Fish and Game and the Department of Health and Environmental Sciences is being conducted to gather information that will be helpful in establishing policy on the type of subdivision activity that can be allowed in the vicinity of Ennis Lake.

The study will last at least one (1) year. Sampling stations have been set up on the Madison River above Ennis at the Highway U.S. 287 bridge. Another station has been set up on the river below the lake. Chemical analysis were run on samples last fall. Similar samples will be collected this winter and next summer. Nitrate, phosphate, chloride, alkalinity hardness and ammonia analysis will be run at each river station.

Two sampling stations will be established in Ennis Lake. An attempt will be made to show whether the quality of the water in the bay nearest the proposed Troutdale Subdivision is different from the lake proper. Phosphate and nitrate analysis will be run along with algae assays as well as temperature and dissolved oxygen profiles.



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